

Tritium Monitoring

The naturally occurring level of rainwater before the 1950's was about 5 to 10 TU (Tritium Unit). The amount of tritium in the atmosphere increased after nuclear weapons testing caused recharge water to be "tagged" with excess tritium beginning in about 1954. In the beginning levels in excess of 1000 TU were detected. With the elimination of atmospheric nuclear weapons testing, tritium has declined to levels between 50 and 100 TU.

Tritium analysis may be used to estimate the time since recharge to the ground water system and the susceptibility of the ground water system to contamination. Ground water systems with recharge occurring prior to the 1950's will have a tritium level at or below 1 TU. These ground water systems are considered "not vulnerable" and those with higher levels are considered "vulnerable".

Although an aquifer may be determined "not vulnerable" it is important to realize that the potential for contamination may still exist, and a formal well head protection plan is an effective tool in assuring a clean supply of drinking water.

Sampling for tritium is not difficult since few, if any, chemical processes will alter its concentration. However, since tritium is natural in the environment it must be assumed that excessive exposure of the sample to the atmosphere might alter the tritium concentration.

Laboratories known to provide tritium analysis at the required level of detection for a wellhead protection program are listed below.

<p>Tritium Laboratory University of Miami/RSMAS 4600 Rickenbacker Causeway Miami, Florida 33149-1098 Phone 305-421-4100 Fax 305-421-4112 www.rsmas.miami.edu/groups/tritium/ Tritium@rsmas.miami.edu Cost: \$325.00 updated September 7, 2007</p>	<p>Robert Yriart, Office Manager Geochron Laboratories 45 Manning Road Billerica, MA 01821 Telephone: 978-667-7080 Fax: 978-667-6999 http://www.geochronlabs.com/ General questions: staff@geochronlabs.com Billing: ryriart@geochronlabs.com Cost: \$185.00 Updated September 28, 2007</p>
<p>Isotech Laboratories, Inc. 1308 Parkland Court Champaign, Illinois 61821 Telephone: 877-362-4190 or 217-398-3490 Fax: 217-398-3493 http://www.isotechlabs.com/ Cost: \$300.00 Updated September 28, 2007</p>	<p>Center for Applied Isotope Studies University of Georgia 120 Riverbend Road Athens, GA 30602 Telephone: 706-542-1395 Fax: 706-542-6106 http://www.uga.edu/~cais/index.htm Email: cais@uga.edu See website for shipping address Cost: \$320.00 Updated September 28, 2007</p>
<p>Mary Ellen Patton, Administrator Environmental Isotope Laboratory University of Waterloo 200 University Avenue, West Waterloo, Ontario N2L-3G1 General line: 519-888-4732 Direct line: 519-888-4567 www.uwelab.ca mepatton@uwaterloo.ca Cost: \$190.00 Canadian Dollars (Lab cannot invoice in U.S. dollars) Updated September 28, 2007</p>	

Call for shipping and billing information.